

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants : Linda B. Buck and Richard Axel  
U.S. Serial No. : Not Yet Known  
Filed : Herewith  
For : ODORANT RECEPTORS AND USES THEREOF

1185 Avenue of the Americas  
New York, New York 10036  
January 26, 2001

Assistant Commissioner for Patents  
Washington, D.C. 20231


Sir:

STATEMENT IN ACCORDANCE WITH 37 C.F.R. §1.821(f)

In accordance with 37 C.F.R. §1.821(f), I hereby certify that the computer readable form containing the nucleic acid and/or amino acid sequences required by 37 C.F.R. §1.821(e) and submitted with the above-identified application contains the same information as the written "Sequence Listing" (98 pages) that is submitted as part of the application.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these were made with the knowledge that wilful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such wilful false statements may jeopardize the validity of the application or any patent issued thereon.

Respectfully submitted,



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# SEQUENCE LISTING

<110> Buck, Linda  
Axel, Richard

<120> ODORANT RECEPTORS AND USES THEREOF

<130> 0575/38586-B/JPW/ADM

<150> US 08/129,079

<151> 1993-10-05

<160> 80

<170> PatentIn version 3.0

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Phe Tyr Xaa Tyr Phe Lys Ile Leu Cys Cys Ile Cys Ser Ile Ser Ser  
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Thr	Lys	Asn	Lys	Val	Ile	Thr	Tyr	Glu	Gly	Cys	Ile	Ser	Gln	Val	Tyr
			20					25					30		
Phe	Ser	Tyr	Ser	Leu	Glu	Phe	Trp	Thr	Thr	Phe	Phe	Ser	Thr	Val	Met
		35					40					45			
Ala	Tyr	Asp	Arg	Tyr	Val	Ala	Ile	Cys	His	Pro	Ser	Xaa	Tyr	Thr	Gly
	50					55					60				
His	His	Glu	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
65					70				75						80
Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
				85				90						95	
Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
				100				105						110	
Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
				115				120						125	
Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Tyr
				130				135						140	
Ser	Tyr	Ser	Lys	Ile	Val	Ser	Ser	Ile	Arg	Glu	Ile	Ser	Ser	Ser	Gln
145					150					155					160
Gly	Lys	Tyr	Lys	Xaa	Phe	Ser	Thr	Cys	Ala	Ser	His	Leu	Ser	Val	Val
				165					170						175
Ser	Leu	Phe	Tyr	Ser	Thr	Leu	Leu	Gly	Val	Tyr	Leu	Ser	Ser	Ser	Phe
			180					185						190	
Thr	Gln	Asn	Ser	His	Ser	Thr	Ala	Arg	Ala	Ser	Val	Met	Tyr	Ser	Val
		195					200						205		
Val	Thr	Pro	Met	Leu											
				210											

<210> 15  
 <211> 636  
 <212> DNA  
 <213> Rattus sp. J2

<400> 15  
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 tatgaagact gtatttccca gatgtttgta ctcttgggtt ttggagaact ggacaacttt 120  
 ctcttggttg tgatggccta tgatcgatat gtggctatct gtcacccact gtattacaca 180  
 gtcaattgtga accaccgact ctgtatcctg ctgcttctgc tgtcctgggt tgtcagcatt 240  
 ttacatgcct tottacagag ctttaattgta ctacagtga ccttctgtgg agatgtgaaa 300  
 atccctcact tcttctgtga gctcaatcag ctgtcccaac tcacatgttc agacaacttt 360  
 ccaagtcacc tcacaatgca tcttgtacct gttatatattg cagctatttc cctcagtgg 420  
 atcctttact cttatttcaa gatagtgtct tccatacgtt ctatgtcttc agttcaagg 480  
 aagtacaagg cattttctac atgtgcctct cacctttcca ttgtctcctt attttatagt 540  
 acaggcctcg ggggtgtacgt cagttctgct gtgatccgaa gtcacactc ctctgcaagt 600  
 gcttcgggtca tgtatactgt ggtcaccccc atgttg 636

<210> 16  
 <211> 212  
 <212> PRT  
 <213> Rattus sp. J2

<400> 16

Thr	Ser	Thr	Thr	Ile	Pro	Lys	Met	Leu	Val	Asn	Ile	His	Thr	Gln	Ser
1				5					10					15	
Asn	Thr	Ile	Thr	Tyr	Glu	Asp	Cys	Ile	Ser	Gln	Met	Phe	Val	Leu	Leu
		20						25					30		
Val	Phe	Gly	Glu	Leu	Asp	Asn	Phe	Leu	Leu	Ala	Val	Met	Ala	Tyr	Asp
		35					40					45			
Arg	Tyr	Val	Ala	Ile	Cys	His	Pro	Leu	Tyr	Tyr	Thr	Val	Ile	Val	Asn
	50					55					60				
His	Arg	Leu	Cys	Ile	Leu	Leu	Leu	Leu	Leu	Ser	Trp	Val	Val	Ser	Ile
65					70					75				80	
Leu	His	Ala	Phe	Leu	Gln	Ser	Leu	Ile	Val	Leu	Gln	Leu	Thr	Phe	Cys
				85					90					95	
Gly	Asp	Val	Lys	Ile	Pro	His	Phe	Phe	Cys	Glu	Leu	Asn	Gln	Leu	Ser
		100						105					110		
Gln	Leu	Thr	Cys	Ser	Asp	Asn	Phe	Pro	Ser	His	Leu	Thr	Met	His	Leu
		115					120					125			

Val Pro Val Ile Phe Ala Ala Ile Ser Leu Ser Gly Ile Leu Tyr Ser  
 130 135 140

Tyr Phe Lys Ile Val Ser Ser Ile Arg Ser Met Ser Ser Val Gln Gly  
 145 150 155 160

Lys Tyr Lys Ala Phe Ser Thr Cys Ala Ser His Leu Ser Ile Val Ser  
 165 170 175

Leu Phe Tyr Ser Thr Gly Leu Gly Val Tyr Val Ser Ser Ala Val Ile  
 180 185 190

Arg Ser Ser His Ser Ser Ala Ser Ala Ser Val Met Tyr Thr Val Val  
 195 200 205

Thr Pro Met Leu  
 210

<210> 17  
 <211> 646  
 <212> DNA  
 <213> Rattus sp. J4

<400> 17  
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 taccatctca taccttggat gttctataca gtttggetca gctgctttgt ttggaggctct 120  
 tgaatgcttc ctcttggtg ccatggcgta tgatcgtttt gtagcaatct gcaaccact 180  
 gctttattca acgaaaatgt ccacacaagt ctgtgtccag ttggttgtgg gatcttatat 240  
 agggggattt cttaatgcct cctcttttac cctttccttt ttttccttgt ccttctgtgg 300  
 accaaataga atcaatcact tttactgtga ttttgctccg ttagtagaac tttcttgctc 360  
 tgatgtcagc gttcctgatg ctgttacctc attttctgct gctcagtta ctatgctcac 420  
 agtggtttat atagccatct cctataccta tatcctcact accatcctga agatgcgttc 480  
 cactgagggt cgacagaaag cattctctac ctgcaattcc cacctcaactg cagtcaactct 540  
 gtgctatgga accatcacat tcattctatgt gatgccaag tccagctact ccacagacca 600  
 gaacaagggt gtgtctgtgt tttatatggt ggtgatcccc atgttg 646

<210> 18  
 <211> 215  
 <212> PRT  
 <213> Rattus sp. J4

<400> 18

Ile Gly Tyr Ser Ser Ser Val Thr Pro Asn Met Leu Val Asn Phe Leu  
 1 5 10 15

Ile Lys Gln Asn Thr Ile Ser Tyr Leu Gly Cys Ser Ile Gln Phe Gly

20										25										30														
Ser	Ala	Ala	Leu	Phe	Gly	Gly	Leu	Glu	Cys	Phe	Leu	Leu	Ala	Ala	Met																			
		35					40					45																						
Ala	Tyr	Asp	Arg	Phe	Val	Ala	Ile	Cys	Asn	Pro	Leu	Leu	Tyr	Ser	Thr																			
	50					55					60																							
Lys	Met	Ser	Thr	Gln	Val	Cys	Val	Gln	Leu	Val	Val	Gly	Ser	Tyr	Ile																			
	65				70					75					80																			
Gly	Gly	Phe	Leu	Asn	Ala	Ser	Ser	Phe	Thr	Leu	Ser	Phe	Phe	Ser	Leu																			
				85					90					95																				
Ser	Phe	Cys	Gly	Pro	Asn	Arg	Ile	Asn	His	Phe	Tyr	Cys	Asp	Phe	Ala																			
			100					105					110																					
Pro	Leu	Val	Glu	Leu	Ser	Cys	Ser	Asp	Val	Ser	Val	Pro	Asp	Ala	Val																			
		115					120					125																						
Thr	Ser	Phe	Ser	Ala	Ala	Ser	Val	Thr	Met	Leu	Thr	Val	Phe	Ile	Ile																			
							135					140																						
Ala	Ile	Ser	Tyr	Thr	Tyr	Ile	Leu	Ile	Thr	Ile	Leu	Lys	Met	Arg	Ser																			
	145					150				155					160																			
Thr	Glu	Gly	Arg	Gln	Lys	Ala	Phe	Ser	Thr	Cys	Thr	Ser	His	Leu	Thr																			
				165					170					175																				
Ala	Val	Thr	Leu	Cys	Tyr	Gly	Thr	Ile	Thr	Phe	Ile	Tyr	Val	Met	Pro																			
			180					185					190																					
Lys	Ser	Ser	Tyr	Ser	Thr	Asp	Gln	Asn	Lys	Val	Val	Ser	Val	Phe	Tyr																			
		195					200					205																						
Met	Val	Val	Ile	Pro	Met	Leu																												
		210				215																												

<210> 19  
 <211> 481  
 <212> DNA  
 <213> Rattus sp. J7

<400> 19  
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 cctctcctgt tggtttgctg gcctgttgat catcctccca cctcttggtc atggcctcca 120  
 gctggagttc tgtgactcca atgtgattga tcattttggc tgtgatgcct ctccaattct 180  
 gcagataacc tgctcagaca cggtatttat agagaaaatt gtcttggtt ttgccatact 240  
 gacactcatt attactctgg tatgtgttgt tctctcttac acatacatca tcaagacat 300  
 tttaaagttt ccttctgctc aacaaagaaa aaaggccttt tctacatgtt cttcccat 360  
 gattgtggtt tccatcacct atgggagctg tattttcatt tacatcaaac cttcagcgaa 420  
 ggaaggggta gccatcaata aggttgatc tgtgctcaca acatcagtcg ccctttgct 480

<210> 20  
 <211> 160  
 <212> PRT  
 <213> Rattus sp. J7

<400> 20

Ile Cys Lys Pro Leu His Tyr Thr Thr Ile Met Asn Asn Arg Val Cys  
 1 5 10 15

Thr Val Leu Val Leu Ser Cys Trp Phe Ala Gly Leu Leu Ile Ile Leu  
 20 25 30

Pro Pro Leu Gly His Gly Leu Gln Leu Glu Phe Cys Asp Ser Asn Val  
 35 40 45

Ile Asp His Phe Gly Cys Asp Ala Ser Pro Ile Leu Gln Ile Thr Cys  
 50 55 60

Ser Asp Thr Val Phe Ile Glu Lys Ile Val Leu Ala Phe Ala Ile Leu  
 65 70 75 80

Thr Leu Ile Ile Thr Leu Val Cys Val Val Leu Ser Tyr Thr Tyr Ile  
 85 90 95

Ile Lys Thr Ile Leu Lys Phe Pro Ser Ala Gln Gln Arg Lys Lys Ala  
 100 105 110

Phe Ser Thr Cys Ser Ser His Met Ile Val Val Ser Ile Thr Tyr Gly  
 115 120 125

Ser Cys Ile Phe Ile Tyr Ile Lys Pro Ser Ala Lys Glu Gly Val Ala  
 130 135 140

Ile Asn Lys Val Val Ser Val Leu Thr Thr Ser Val Ala Pro Leu Leu  
 145 150 155 160

<210> 21  
 <211> 481  
 <212> DNA  
 <213> Rattus sp. J8

<220>  
 <221> misc\_feature  
 <222> ()..()  
 <223> n = unknown

<400> 21

catctgccac ccgctccact actctcttct catgagtcct gacaactgtg ctgctctggt 60  
 aacagtctcc tgggtgacag ggggtggcac gggcttctct ccttccctcc tgatttctaa 120  
 gttggacttc tgtgggccca accgcatcaa ccatttcttc tgtgacctcc ctccattaat 180





<213> Rattus sp. J11

<220>

<221> misc\_feature

<222> ()..()

<223> n = unknown

<400> 23

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ngtctgcttc tcctccacca ctgtcccaa ggtactggct aaccacatac tcagtagtca      60
ggccatttcc ttctctgggt gtctaaactca gctgtatttt ctctgtgtgt ctgtgaatat    120
ggacaatttc ctgotggctg tgatggccta tgacagattt gtggccatat gccacccttt     180
gtactacaca acaaagatga cccaccagct ctgtgtcttg ctgggtgtctg gatcannnnn    240
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn    300
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn    360
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nntgtgatca tggtcacccc    420
atttgtctgc atcctcatct cttacatcta catcaccaat gcagtccctca gagtctcatc    480
ctttagggga ggatggaaag ctttctccac ctgtggctca cacctggctg tgggtctgct     540
cttctatggc accatcattg ctgtgtattt caatcctgta tcttcccatt catctgagaa    600
ggacactgca gcaactgtgc tatacacagt ggtgactccc atgttg                      646
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<210> 24

<211> 215

<212> PRT

<213> Rattus sp. J11

<220>

<221> UNSURE

<222> (79)..(134)

<223> x = unknown

<400> 24

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Val Cys Phe Ser Ser Thr Thr Val Pro Lys Val Leu Ala Asn His Ile
1              5              10              15

Leu Ser Ser Gln Ala Ile Ser Phe Ser Gly Cys Leu Thr Gln Leu Tyr
20              25              30

Phe Leu Cys Val Ser Val Asn Met Asp Asn Phe Leu Leu Ala Val Met
35              40              45

Ala Tyr Asp Arg Phe Val Ala Ile Cys His Pro Leu Tyr Tyr Thr Thr
50              55              60

Lys Met Thr His Gln Leu Cys Val Leu Leu Val Ser Gly Ser Xaa Xaa
65              70              75              80
```

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
                   85                                  90                                  95  
 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
                   100                                  105                                  110  
 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
                   115                                  120                                  125  
 Xaa Xaa Xaa Xaa Xaa Xaa Val Ile Met Val Thr Pro Phe Val Cys Ile  
                   130                                  135                                  140  
 Leu Ile Ser Tyr Ile Tyr Ile Thr Asn Ala Val Leu Arg Val Ser Ser  
 145                                  150                                  155                                  160  
 Phe Arg Gly Gly Trp Lys Ala Phe Ser Thr Cys Gly Ser His Leu Ala  
                   165                                  170                                  175  
 Val Val Cys Leu Phe Tyr Gly Thr Ile Ile Ala Val Tyr Phe Asn Pro  
                   180                                  185                                  190  
 Val Ser Ser His Ser Ser Glu Lys Asp Thr Ala Ala Thr Val Leu Tyr  
                   195                                  200                                  205  
 Thr Val Val Thr Pro Met Leu  
                   210                                  215

<210> 25  
 <211> 646  
 <212> DNA  
 <213> Rattus sp. J14

<220>  
 <221> misc\_feature  
 <222> ()..()  
 <223> n = unknown

<400> 25  
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 ggccatttcc ttctctgggt gtctaaactca gctgtatttt ctctgtgtgt ctgtgaatat 120  
 ggacaatttc ctgctggctg tgatggccta tgacagattt gtggccatat gccacccttt 180  
 gtactacaca acaccgatga cccaccagct ctgtgtcttg ctggtgtctg gatcannnnn 240  
 nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 300  
 nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 360  
 nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nntgtgatca tggtcacccc 420  
 atttgtctgc atcctcatct cttacatcta catcaccaat gcagtcttca gagtctcatc 480  
 ctttagggga ggaaggaaag cttctccac ctgtggetca cacctggctg tggctctgcct 540  
 cttctatggc accatcattg ctgtgtattt caatcctgta tcttccatt catctgagaa 600

ggacactgca gcaactgtgc tatacacagt ggtgactccc atgttg

646

<210> 26  
 <211> 215  
 <212> PRT  
 <213> Rattus sp. J14

<220>  
 <221> UNSURE  
 <222> (79)..(134)  
 <223> x = unknown

<400> 26

Val	Cys	Phe	Ser	Ser	Thr	Thr	Val	Pro	Lys	Val	Leu	Ala	Asn	His	Ile	1	5	10	15
Leu	Ser	Ser	Gln	Ala	Ile	Ser	Phe	Ser	Gly	Cys	Leu	Thr	Gln	Leu	Tyr	20	25	30	
Phe	Leu	Cys	Val	Ser	Val	Asn	Met	Asp	Asn	Phe	Leu	Leu	Ala	Val	Met	35	40	45	
Ala	Tyr	Asp	Arg	Phe	Val	Ala	Ile	Cys	His	Pro	Leu	Tyr	Tyr	Thr	Thr	50	55	60	
Pro	Met	Thr	His	Gln	Leu	Cys	Val	Leu	Leu	Val	Ser	Gly	Ser	Xaa	Xaa	65	70	75	80
Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	85	90	95	
Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	100	105	110	
Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	115	120	125	
Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Val	Ile	Met	Val	Thr	Pro	Phe	Val	Cys	Ile	130	135	140	
Leu	Ile	Ser	Tyr	Ile	Tyr	Ile	Thr	Asn	Ala	Val	Leu	Arg	Val	Ser	Ser	145	150	155	160
Phe	Arg	Gly	Gly	Trp	Lys	Ala	Phe	Ser	Thr	Cys	Gly	Ser	His	Leu	Ala	165	170	175	
Val	Val	Cys	Leu	Phe	Tyr	Gly	Thr	Ile	Ile	Ala	Val	Tyr	Phe	Asn	Pro	180	185	190	
Val	Ser	Ser	His	Ser	Ser	Glu	Lys	Asp	Thr	Ala	Ala	Thr	Val	Leu	Tyr	195	200	205	
Thr	Val	Val	Thr	Pro	Met	Leu	210	215											

<210> 27  
 <211> 481  
 <212> DNA  
 <213> Rattus sp. J15

<220>  
 <221> misc\_feature  
 <222> ()..()  
 <223> x = unknown

<400> 27  
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 cgtggcctcc tggttgggag gatccctcaa cgctccatt cagacttctc tgacccttca 120  
 gttcccttac tgtggatcac ggaagatctc ccacttcttc tgtgaggtgc cctogctgt 180  
 gannntggcc tgtgcagaca ctgaagccta tgagcaggta ctatttgtga caggcgtggt 240  
 ggtcctcctg gtgccatta cattcattac tgcctcttat gccctcatcc tggctgtgt 300  
 gctccgaatg cactctgagg aggggagtca gaaggccta gccacatgct cctctcacct 360  
 gacagtcttc aatctcttct atgggcccct tgtctacacc tacatgttac ctgcttctca 420  
 tcaactacca ggccaagacg acatagtatc cgtcttttac accgttctca caccoatgct 480  
 t 481

<210> 28  
 <211> 160  
 <212> PRT  
 <213> Rattus sp. J15

<220>  
 <221> UNSURE  
 <222> (61)..(62)  
 <223> x = unknown

<400> 28

Ile	Cys	Asn	Pro	Leu	Arg	Tyr	Pro	Val	Leu	Met	Ser	Gly	Arg	Val	Cys
1				5					10					15	
Leu	Leu	Met	Val	Val	Ala	Ser	Trp	Leu	Gly	Gly	Ser	Leu	Asn	Ala	Ser
			20					25					30		
Ile	Gln	Thr	Ser	Leu	Thr	Leu	Gln	Phe	Pro	Tyr	Cys	Gly	Ser	Arg	Lys
		35				40						45			
Ile	Ser	His	Phe	Phe	Cys	Glu	Val	Pro	Ser	Leu	Leu	Xaa	Xaa	Ala	Cys
	50					55					60				
Ala	Asp	Thr	Glu	Ala	Tyr	Glu	Gln	Val	Leu	Phe	Val	Thr	Gly	Val	Val
65					70				75					80	

Val Leu Leu Val Pro Ile Thr Phe Ile Thr Ala Ser Tyr Ala Leu Ile  
85 90 95  
Leu Ala Ala Val Leu Arg Met His Ser Ala Glu Gly Ser Gln Lys Ala  
100 105 110  
Leu Ala Thr Cys Ser Ser His Leu Thr Val Val Asn Leu Phe Tyr Gly  
115 120 125  
Pro Leu Val Tyr Thr Tyr Met Leu Pro Ala Ser Tyr His Ser Pro Gly  
130 135 140  
Gln Asp Asp Ile Val Ser Val Phe Tyr Thr Val Leu Thr Pro Met Leu  
145 150 155 160

<210> 29  
<211> 481  
<212> DNA  
<213> Rattus sp. J16

<400> 29  
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tctccttttt tgtggcccca atcacattca acacatcttt tgtgatttcc cacctgtgct 180  
gagcttggtt tgtactgata catcagtgaa tgtcctggta gattttatta taaacctctg 240  
caagatcctg gccaccttcc tgctgacccg gagctcctac ttgcagataa tccgcacagt 300  
gtccaagatt ccttcagctg caggcaagaa gaaagcattc tcgacttggtg cctcccatct 360  
cactgtgggtt ctcatcttct atgggagcat ccttttcatg tatgtgoggc tgaagaagac 420  
ttaactccctt gactacgaca gagccttggc agtagtctac tccgtgggta cccctttcct 480  
g 481

<210> 30  
<211> 160  
<212> PRT  
<213> Rattus sp. J16

<400> 30

Ile Cys Arg Pro Leu His Tyr Pro Thr Leu Met Thr Gln Thr Leu Cys  
1 5 10 15  
Ala Lys Ile Ala Thr Gly Cys Trp Leu Gly Gly Leu Ala Gly Pro Val  
20 25 30  
Val Glu Ile Ser Leu Val Ser Arg Leu Leu Phe Cys Gly Pro Asn His  
35 40 45  
Ile Gln His Ile Phe Cys Asp Phe Pro Pro Val Leu Ser Leu Ala Cys  
50 55 60

Thr Asp Thr Ser Val Asn Val Leu Val Asp Phe Ile Ile Asn Leu Cys  
 65 70 75 80  
 Lys Ile Leu Ala Thr Phe Leu Leu Ile Leu Ser Ser Tyr Leu Gln Ile  
 85 90 95  
 Ile Arg Thr Val Leu Lys Ile Pro Ser Ala Ala Gly Lys Lys Lys Ala  
 100 105 110  
 Phe Ser Thr Cys Ala Ser His Leu Thr Val Val Leu Ile Phe Tyr Gly  
 115 120 125  
 Ser Ile Leu Phe Met Tyr Val Arg Leu Lys Lys Thr Tyr Ser Leu Asp  
 130 135 140  
 Tyr Asp Arg Ala Leu Ala Val Val Tyr Ser Val Val Thr Pro Phe Leu  
 145 150 155 160

<210> 31  
 <211> 481  
 <212> DNA  
 <213> Rattus sp. J17

<220>  
 <221> misc\_feature  
 <222> ()..()  
 <223> n = unknown

<400> 31  
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 tgcaggatct tatatagggg gttttcttaa tacttgccctc atcatgtttt actttttctc 120  
 tttctctctc tgtgggccaa atatagttga tcattttttc tgtgattttg ctcttttnt 180  
 ggaactttcg tgctctgatg tgagtgtctc tgtagttggt atgtcatttt ctgctggctc 240  
 agttactatg atcacagtgt ttatcatagc catctctat tcttacctcc tcataccat 300  
 cctgaagatg tcctcaactg agggccgtca caaggctttc tccacatgta cctccacct 360  
 cactgcagtc actctctact atggcaccat taccttcatt tatgtgatgc ccaagtccac 420  
 atactctaca gaccagaaca aggtggtgtc tgtgttttac atggtggtga tcccaatgtt 480  
 g 481

<210> 32  
 <211> 160  
 <212> PRT  
 <213> Rattus sp. J17

<220>  
 <221> UNSURE  
 <222> (59)..(60)  
 <223> x = unknown

<400> 32

Ile Cys Asn Pro Leu Leu Tyr Ser Thr Lys Met Ser Thr Gln Val Cys  
1 5 10 15

Ile Gln Leu Val Ala Gly Ser Tyr Ile Gly Gly Phe Leu Asn Thr Cys  
20 25 30

Leu Ile Met Phe Tyr Phe Phe Ser Phe Leu Phe Cys Gly Pro Asn Ile  
35 40 45

Val Asp His Phe Phe Cys Asp Phe Ala Pro Xaa Xaa Glu Leu Ser Cys  
50 55 60

Ser Asp Val Ser Val Ser Val Val Val Met Ser Phe Ser Ala Gly Ser  
65 70 75 80

Val Thr Met Ile Thr Val Phe Ile Ile Ala Ile Ser Tyr Ser Tyr Ile  
85 90 95

Leu Ile Thr Ile Leu Lys Met Ser Ser Thr Glu Gly Arg His Lys Ala  
100 105 110

Phe Ser Thr Cys Thr Ser His Leu Thr Ala Val Thr Leu Tyr Tyr Gly  
115 120 125

Thr Ile Thr Phe Ile Tyr Val Met Pro Lys Ser Thr Tyr Ser Thr Asp  
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actgactttc agcacaaaaa ctgaaatccc tcaacttttc tgtgagctgg ctcatatcat 180

caaacttacc tgttccgata attttatcaa ctatctgctg atatacacag agtctgtctt 240

atTTTTtggc gttcatattg tagggatcat tttgtcttat atttacctg tctcctcagt 300

tttaagaatg tcattattgg gaggaatgta taaagccttt tcaacatgtg gatctcattt 360

gtcggttgtc tctgttttat ggcacagggt ttgggggtaca cataagctct ccacttactg 420

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Phe His Ile Leu Met Val Leu Ile Leu Thr Phe Ser Thr Lys Thr Glu  
35 40 45

Ile Pro His Phe Phe Cys Glu Leu Ala His Ile Ile Lys Leu Thr Cys  
50 55 60

Ser Asp Asn Phe Ile Asn Tyr Leu Leu Ile Tyr Thr Glu Ser Val Leu  
65 70 75 80

Phe Phe Gly Val His Ile Val Gly Ile Ile Leu Ser Tyr Ile Tyr Thr  
85 90 95

Val Ser Ser Val Leu Arg Met Ser Leu Leu Gly Gly Met Tyr Lys Ala  
100 105 110

Phe Ser Thr Cys Gly Ser His Leu Ser Val Val Ser Val Leu Trp His  
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Arg Phe Trp Gly Thr His Lys Leu Ser Thr Tyr  
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cccactctgt ggtccttaag tcgttgatta tcttttctgc gagctgcca tccttctgca 180

cctgttctgc acagatacat ctctgctgga gnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 240

nnnnnnnnnn nnccttct cctgattgtt ctctcctacc ttgcatacct ggtggctgtg 300

ataagaatag actcagctga gggcagaaaa aaggcctttt caacttgtgc ttcacacttg 360

gctgtggtga ccactacta tggaacaggg ctgatcaggt acttgaggcc caagtcctt 420

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			20					25					30		
Ile	Pro	Leu	Cys	Phe	Thr	Ile	Leu	Pro	Leu	Cys	Gly	Pro	Tyr	Val	Val
		35					40					45			
Asp	Tyr	Leu	Phe	Cys	Glu	Leu	Pro	Ile	Leu	Leu	His	Leu	Phe	Cys	Thr
	50					55					60				
Asp	Thr	Ser	Leu	Leu	Glu	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
65					70				75						80
Xaa	Xaa	Xaa	Xaa	Pro	Phe	Leu	Leu	Ile	Val	Leu	Ser	Tyr	Leu	Arg	Ile
				85					90					95	
Leu	Val	Ala	Val	Ile	Arg	Ile	Asp	Ser	Ala	Glu	Gly	Arg	Lys	Lys	Ala
		100						105					110		
Phe	Ser	Thr	Cys	Ala	Ser	His	Leu	Ala	Val	Val	Thr	Ile	Tyr	Tyr	Gly
		115					120					125			
Thr	Gly	Leu	Ile	Arg	Tyr	Leu	Arg	Pro	Lys	Ser	Leu	Tyr	Ser	Ala	Glu
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32

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32

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<220>
<221> misc_feature
<222> (21)..(21)
<223> n = g or a

```

```

<220>
<221> modified_base
<222> (24)..(24)
<223> i

```

```

<220>
<221> misc_feature
<222> (25)..(25)
<223> n = g or c

```

```

<220>
<221> misc_feature
<222> (26)..(26)
<223> n = a or t

```

```

<220>
<221> modified_base
<222> (27)..(27)
<223> i

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```

<220>
<221> misc_feature
<222> (28)..(28)
<223> n = g or c

```

```

<400> 49
aanannnnna cnannnnnan ntgnnnnnnc

```

29

```

<210> 50
<211> 6
<212> PRT
<213> artificial - motif

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<400> 50

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```

Lys Ile Val Ser Ser Ile
1           5

```

```

<210> 51
<211> 6
<212> PRT
<213> artificial - motif

```

```

<400> 51

```

Arg Ile Val Ser Ser Ile

1 5

<210> 52

<211> 6

<212> PRT

<213> artificial - motif

<400> 52

His Ile Thr Cys Ala Val

1 5

<210> 53

<211> 6

<212> PRT

<213> artificial - motif

<400> 53

His Ile Thr Trp Ala Val

1 5

<210> 54

<211> 19

<212> PRT

<213> Rattus sp.

<400> 54

Leu Ser Lys Glu Asp Cys Ser Gly Phe Ser Asp Val His Cys Gly Tyr

1 5 10 15

Ser Asp Ala

<210> 55

<211> 9

<212> PRT

<213> Artificial - motif

<220>

<221> UNSURE

<222> (2)..(7)

<223> x = unknown

<400> 55

Leu Xaa Xaa Pro Met Tyr Xaa Phe Leu

1 5

<210> 56

<211> 9

<212> PRT

<213> Artificial - motif

<220>

<221> VARIANT

<222> (2)..(2)  
<223> X = H or Q

<220>  
<221> VARIANT  
<222> (3)..(3)  
<223> X = K or M or T

<220>  
<221> VARIANT  
<222> (7)..(7)  
<223> X = F or L

<400> 56

Leu Xaa Xaa Pro Met Tyr Xaa Phe Leu  
1 5

<210> 57  
<211> 10  
<212> PRT  
<213> Artificial - motif

<220>  
<221> UNSURE  
<222> (2)..(7)  
<223> X = UNKNOWN

<400> 57

Met Xaa Tyr Asp Arg Xaa Xaa Ala Ile Cys  
1 5 10

<210> 58  
<211> 10  
<212> PRT  
<213> Artificial - motif

<220>  
<221> VARIANT  
<222> (2)..(2)  
<223> X = A OR S

<220>  
<221> VARIANT  
<222> (6)..(6)  
<223> X = F OR Y

<220>  
<221> VARIANT  
<222> (7)..(7)  
<223> X = L or V

<400> 58

Met Xaa Tyr Asp Arg Xaa Xaa Ala Ile Cys  
1 5 10

<210> 59

<211> 7

<212> PRT

<213> Artificial - motif

<220>

<221> UNSURE

<222> (3)..(4)

<223> X = Unknown

<400> 59

Asp Arg Xaa Xaa Ala Ile Cys  
1 5

<210> 60

<211> 7

<212> PRT

<213> Artificial - motif

<220>

<221> VARIANT

<222> (3)..(3)

<223> X = F or Y

<220>

<221> VARIANT

<222> (4)..(4)

<223> X = L or V

<400> 60

Asp Arg Xaa Xaa Ala Ile Cys  
1 5

<210> 61

<211> 9

<212> PRT

<213> Artificial - motif

<220>

<221> UNSURE

<222> (2)..(7)

<223> X = Unknown

<220>

<221> VARIANT

<222> (1)..(1)

<223> X = K or R

<400> 61

Xaa Xaa Phe Ser Thr Cys Xaa Ser His  
1 5

<210> 62

<211> 9

<212> PRT

<213> Artificial - motif

<220>

<221> VARIANT

<222> (1)..(1)

<223> X = K or R

<220>

<221> VARIANT

<222> (2)..(2)

<223> X = A or I or S or V

<220>

<221> VARIANT

<222> (7)..(7)

<223> X = A or G or S

<400> 62

Xaa Xaa Phe Ser Thr Cys Xaa Ser His  
1 5

<210> 63

<211> 7

<212> PRT

<213> Artificial - motif

<220>

<221> UNSURE

<222> (5)..(5)

<223> X = Unknown

<400> 63

Phe Ser Thr Cys Xaa Ser His  
1 5

<210> 64

<211> 7

<212> PRT

<213> Artificial - motif

<220>

<221> VARIANT

<222> (5)..(5)



<223> X = A or G or S

<400> 64

Phe Ser Thr Cys Xaa Ser His  
1 5

<210> 65

<211> 12

<212> PRT

<213> Artificial - motif

<220>

<221> UNSURE

<222> (2)..(9)

<223> X = Unknown

<400> 65

Pro Xaa Xaa Asn Pro Xaa Ile Tyr Xaa Leu Arg Asn  
1 5 10

<210> 66

<211> 12

<212> PRT

<213> Artificial - motif

<220>

<221> VARIANT

<222> (2)..(2)

<223> X = M or L or V

<220>

<221> VARIANT

<222> (3)..(3)

<223> X = F or L or V

<220>

<221> VARIANT

<222> (6)..(6)

<223> X = F or I

<220>

<221> VARIANT

<222> (9)..(9)

<223> X = C or S or T

<400> 66

Pro Xaa Xaa Asn Pro Xaa Ile Tyr Xaa Leu Arg Asn  
1 5 10

<210> 67

<211> 8  
 <212> PRT  
 <213> Artificial - motif

<220>  
 <221> UNSURE  
 <222> (2)..(6)  
 <223> X = Unknown

<400> 67

Pro Xaa Xaa Asn Pro Xaa Ile Tyr  
 1 5

<210> 68  
 <211> 8  
 <212> PRT  
 <213> Artificial - motif

<220>  
 <221> VARIANT  
 <222> (2)..(2)  
 <223> X = M or L or V

<220>  
 <221> VARIANT  
 <222> (3)..(3)  
 <223> X = F or L or V

<220>  
 <221> VARIANT  
 <222> (6)..(6)  
 <223> X = F or I

<400> 68

Pro Xaa Xaa Asn Pro Xaa Ile Tyr  
 1 5

<210> 69  
 <211> 9  
 <212> PRT  
 <213> Artificial - motif

<220>  
 <221> UNSURE  
 <222> (3)..(6)  
 <223> X = Unknown

<400> 69

Asn Pro Xaa Ile Tyr Xaa Leu Arg Asn  
 1 5

<210> 70  
 <211> 9  
 <212> PRT  
 <213> Artificial - motif

<220>  
 <221> VARIANT  
 <222> (3)..(3)  
 <223> X = F or I

<220>  
 <221> VARIANT  
 <222> (6)..(6)  
 <223> X = C or S or T

<400> 70

Asn Pro Xaa Ile Tyr Xaa Leu Arg Asn  
 1 5

<210> 71  
 <211> 333  
 <212> PRT  
 <213> Rattus sp. F3

<400> 71

Met Asp Ser Ser Asn Arg Thr Arg Val Ser Glu Phe Leu Leu Leu Gly  
 1 5 10 15

Phe Val Glu Asn Lys Asp Leu Gln Pro Leu Ile Tyr Gly Leu Phe Leu  
 20 25 30

Ser Met Tyr Leu Val Thr Val Ile Gly Asn Ile Ser Ile Ile Val Ala  
 35 40 45

Ile Ile Ser Asp Pro Cys Leu His Thr Pro Met Tyr Phe Phe Leu Ser  
 50 55 60

Asn Leu Ser Phe Val Asp Ile Cys Phe Ile Ser Thr Thr Val Pro Lys  
 65 70 75 80

Met Leu Val Asn Ile Gln Thr Gln Asn Asn Val Ile Thr Tyr Ala Gly  
 85 90 95

Cys Ile Thr Gln Ile Tyr Phe Phe Leu Leu Phe Val Glu Leu Asp Asn  
 100 105 110

Phe Leu Leu Thr Ile Met Ala Tyr Asp Arg Tyr Val Ala Ile Cys His  
 115 120 125

Pro Met His Tyr Thr Val Ile Met Asn Tyr Lys Leu Cys Gly Phe Leu  
 130 135 140

Val Leu Val Ser Trp Ile Val Ser Val Leu His Ala Leu Phe Gln Ser  
 145 150 155 160

Leu Met Met Leu Ala Leu Pro Phe Cys Thr His Leu Glu Ile Pro His  
 165 170 175  
 Tyr Phe Cys Glu Pro Asn Gln Val Ile Gln Leu Thr Cys Ser Asp Ala  
 180 185 190  
 Phe Leu Asn Asp Leu Val Ile Tyr Phe Thr Leu Val Leu Leu Ala Thr  
 195 200 205  
 Val Pro Leu Ala Gly Ile Phe Tyr Ser Tyr Phe Lys Ile Val Ser Ser  
 210 215 220  
 Ile Cys Ala Ile Ser Ser Val His Gly Lys Tyr Lys Ala Phe Ser Thr  
 225 230 235 240  
 Cys Ala Ser His Leu Ser Val Val Ser Leu Phe Tyr Cys Thr Gly Leu  
 245 250 255  
 Gly Val Tyr Leu Ser Ser Ala Ala Asn Asn Ser Ser Gln Ala Ser Ala  
 260 265 270  
 Thr Ala Ser Val Met Tyr Thr Val Val Thr Pro Met Val Asn Pro Phe  
 275 280 285  
 Ile Tyr Ser Leu Arg Asn Lys Asp Val Lys Ser Val Leu Lys Lys Thr  
 290 295 300  
 Leu Cys Glu Glu Val Ile Arg Ser Pro Pro Ser Leu Leu His Phe Phe  
 305 310 315 320  
 Leu Val Leu Cys His Leu Pro Cys Phe Ile Phe Cys Tyr  
 325 330

<210> 72  
 <211> 313  
 <212> PRT  
 <213> Rattus sp. F5

<400> 72

Met Ser Ser Thr Asn Gln Ser Ser Val Thr Glu Phe Leu Leu Leu Gly  
 1 5 10 15  
 Leu Ser Arg Gln Pro Gln Gln Gln Gln Leu Leu Phe Leu Leu Phe Leu  
 20 25 30  
 Ile Met Tyr Leu Ala Thr Val Leu Gly Asn Leu Leu Ile Ile Leu Ala  
 35 40 45  
 Ile Gly Thr Asp Ser Arg Leu His Thr Pro Met Tyr Phe Phe Leu Ser  
 50 55 60  
 Asn Leu Ser Phe Val Asp Val Cys Phe Ser Ser Thr Thr Val Pro Lys  
 65 70 75 80  
 Val Leu Ala Asn His Ile Leu Gly Ser Gln Ala Ile Ser Phe Ser Gly  
 85 90 95  
 Cys Leu Thr Gln Leu Tyr Phe Leu Ala Val Phe Gly Asn Met Asp Asn

100					105					110					
Phe	Leu	Leu	Ala	Val	Met	Ser	Tyr	Asp	Arg	Phe	Val	Ala	Ile	Cys	His
	115						120					125			
Pro	Leu	His	Tyr	Thr	Thr	Lys	Met	Thr	Arg	Gln	Leu	Cys	Val	Leu	Leu
	130					135					140				
Val	Val	Gly	Ser	Trp	Val	Val	Ala	Asn	Met	Asn	Cys	Leu	Leu	His	Ile
	145					150					155				160
Leu	Leu	Met	Ala	Arg	Leu	Ser	Phe	Cys	Ala	Asp	Asn	Met	Ile	Pro	His
				165					170					175	
Phe	Phe	Cys	Asp	Gly	Thr	Pro	Leu	Leu	Lys	Leu	Ser	Cys	Ser	Asp	Thr
			180						185					190	
His	Leu	Asn	Glu	Leu	Met	Ile	Leu	Thr	Glu	Gly	Ala	Val	Val	Met	Val
		195					200					205			
Thr	Pro	Phe	Val	Cys	Ile	Leu	Ile	Ser	Tyr	Ile	His	Ile	Thr	Cys	Ala
	210					215					220				
Val	Leu	Arg	Val	Ser	Ser	Pro	Arg	Gly	Gly	Trp	Lys	Ser	Phe	Ser	Thr
	225					230					235				240
Cys	Gly	Ser	His	Leu	Ala	Val	Val	Cys	Leu	Phe	Tyr	Gly	Thr	Val	Ile
				245					250					255	
Ala	Val	Tyr	Phe	Asn	Pro	Ser	Ser	Ser	His	Leu	Ala	Gly	Arg	Asp	Met
			260					265					270		
Ala	Ala	Ala	Val	Met	Tyr	Ala	Val	Val	Thr	Pro	Met	Leu	Asn	Pro	Phe
		275					280					285			
Ile	Tyr	Ser	Leu	Arg	Asn	Ser	Asp	Met	Lys	Ala	Ala	Leu	Arg	Lys	Val
	290					295					300				
Leu	Ala	Met	Arg	Phe	Pro	Ser	Lys	Gln							
	305					310									

<210> 73  
 <211> 311  
 <212> PRT  
 <213> Rattus sp. F6

<400> 73

Met	Ala	Trp	Ser	Thr	Gly	Gln	Asn	Leu	Ser	Thr	Pro	Gly	Pro	Phe	Ile
1				5					10					15	
Leu	Leu	Gly	Phe	Pro	Gly	Pro	Arg	Ser	Met	Arg	Ile	Gly	Leu	Phe	Leu
		20						25					30		
Leu	Phe	Leu	Val	Met	Tyr	Leu	Leu	Thr	Val	Val	Gly	Asn	Leu	Ala	Ile
		35					40					45			
Ile	Ser	Leu	Val	Gly	Ala	His	Arg	Cys	Leu	Gln	Thr	Pro	Met	Tyr	Phe
	50					55					60				

Phe	Leu	Cys	Asn	Leu	Ser	Phe	Leu	Glu	Ile	Trp	Phe	Thr	Thr	Ala	Cys	
65					70					75					80	
Val	Pro	Lys	Thr	Leu	Ala	Thr	Phe	Ala	Pro	Arg	Gly	Gly	Val	Ile	Ser	
				85					90					95		
Leu	Ala	Gly	Cys	Ala	Thr	Gln	Met	Tyr	Phe	Val	Phe	Ser	Leu	Gly	Cys	
			100					105					110			
Thr	Glu	Tyr	Phe	Leu	Leu	Ala	Val	Met	Ala	Tyr	Asp	Arg	Tyr	Leu	Ala	
		115					120					125				
Ile	Cys	Leu	Pro	Leu	Arg	Tyr	Gly	Gly	Ile	Met	Thr	Pro	Gly	Leu	Ala	
	130					135					140					
Met	Arg	Leu	Ala	Leu	Gly	Ser	Trp	Leu	Cys	Gly	Phe	Ser	Ala	Ile	Thr	
145					150					155					160	
Val	Pro	Ala	Thr	Leu	Ile	Ala	Arg	Leu	Ser	Phe	Cys	Gly	Ser	Arg	Val	
				165					170					175		
Ile	Asn	His	Phe	Phe	Cys	Asp	Ile	Ser	Pro	Trp	Ile	Val	Leu	Ser	Cys	
			180					185					190			
Thr	Asp	Thr	Gln	Val	Val	Glu	Leu	Val	Ser	Phe	Gly	Ile	Ala	Phe	Cys	
		195					200						205			
Val	Ile	Leu	Gly	Ser	Cys	Gly	Ile	Thr	Leu	Val	Ser	Tyr	Ala	Tyr	Ile	
	210					215					220					
Ile	Thr	Thr	Ile	Ile	Lys	Ile	Pro	Ser	Ala	Arg	Gly	Arg	His	Arg	Ala	
225					230					235					240	
Phe	Ser	Thr	Cys	Ser	Ser	His	Leu	Thr	Val	Val	Leu	Ile	Trp	Tyr	Gly	
				245					250					255		
Ser	Thr	Ile	Phe	Leu	His	Val	Arg	Thr	Ser	Val	Glu	Ser	Ser	Leu	Asp	
			260					265						270		
Leu	Thr	Lys	Ala	Ile	Thr	Val	Leu	Asn	Thr	Ile	Val	Thr	Pro	Val	Leu	
		275					280					285				
Asn	Pro	Phe	Ile	Tyr	Thr	Leu	Arg	Asn	Lys	Asp	Val	Lys	Glu	Ala	Leu	
	290					295					300					
Arg	Arg	Thr	Val	Lys	Gly	Lys										
305					310											

<210> 74  
 <211> 317  
 <212> PRT  
 <213> Rattus sp. F12

<400> 74

Met	Glu	Ser	Gly	Asn	Ser	Thr	Arg	Arg	Phe	Ser	Ser	Phe	Phe	Leu	Leu	
1				5					10					15		

Gly	Phe	Thr	Glu	Asn	Pro	Gln	Leu	His	Phe	Leu	Ile	Phe	Ala	Leu	Phe	20	25	30
Leu	Ser	Met	Tyr	Leu	Val	Thr	Val	Leu	Gly	Asn	Leu	Leu	Ile	Ile	Met	35	40	45
Ala	Ile	Ile	Thr	Gln	Ser	His	Leu	His	Thr	Pro	Met	Tyr	Phe	Phe	Leu	50	55	60
Ala	Asn	Leu	Ser	Phe	Val	Asp	Ile	Cys	Phe	Thr	Ser	Thr	Thr	Ile	Pro	65	70	75
Lys	Met	Leu	Val	Asn	Ile	Tyr	Thr	Gln	Ser	Lys	Ser	Ile	Thr	Tyr	Glu	85	90	95
Asp	Cys	Ile	Ser	Gln	Met	Cys	Val	Phe	Leu	Val	Phe	Ala	Glu	Leu	Gly	100	105	110
Asn	Phe	Leu	Leu	Ala	Val	Met	Ala	Tyr	Asp	Arg	Tyr	Val	Ala	Asn	Cys	115	120	125
His	Pro	Leu	Cys	Tyr	Thr	Val	Ile	Val	Asn	His	Arg	Leu	Cys	Ile	Leu	130	135	140
Leu	Leu	Leu	Leu	Ser	Trp	Val	Ile	Ser	Ile	Phe	His	Ala	Phe	Ile	Gln	145	150	155
Ser	Leu	Ile	Val	Leu	Gln	Leu	Thr	Phe	Cys	Gly	Asp	Val	Lys	Ile	Pro	165	170	175
His	Phe	Phe	Cys	Glu	Leu	Asn	Gln	Leu	Ser	Gln	Leu	Thr	Cys	Ser	Asp	180	185	190
Asn	Phe	Pro	Ser	His	Leu	Ile	Met	Asn	Leu	Val	Pro	Val	Met	Leu	Ala	195	200	205
Ala	Ile	Ser	Phe	Ser	Gly	Ile	Leu	Tyr	Ser	Tyr	Phe	Lys	Ile	Val	Ser	210	215	220
Ser	Ile	His	Ser	Ile	Ser	Thr	Val	Gln	Gly	Lys	Tyr	Lys	Ala	Phe	Ser	225	230	235
Thr	Cys	Ala	Ser	His	Leu	Ser	Ile	Val	Ser	Leu	Phe	Tyr	Ser	Thr	Gly	245	250	255
Leu	Gly	Val	Tyr	Val	Ser	Ser	Ala	Val	Val	Gln	Ser	Ser	His	Ser	Ala	260	265	270
Ala	Ser	Ala	Ser	Val	Met	Tyr	Thr	Val	Val	Thr	Pro	Met	Leu	Asn	Pro	275	280	285
Phe	Ile	Tyr	Ser	Leu	Arg	Asn	Lys	Asp	Val	Lys	Arg	Ala	Leu	Glu	Arg	290	295	300
Leu	Leu	Glu	Gly	Asn	Cys	Lys	Val	His	His	Trp	Thr	Gly				305	310	315

<210> 75

<211> 310

<212> PRT  
 <213> Rattus sp. I3

<400> 75

Met	Asn	Asn	Gln	Thr	Phe	Ile	Thr	Gln	Phe	Leu	Leu	Leu	Gly	Leu	Pro	1	5	10	15
Ile	Pro	Glu	Glu	His	Gln	His	Leu	Phe	Tyr	Ala	Leu	Phe	Leu	Val	Met	20	25	30	
Tyr	Leu	Thr	Thr	Ile	Leu	Gly	Asn	Leu	Leu	Ile	Ile	Val	Leu	Val	Gln	35	40	45	
Leu	Asp	Ser	Gln	Leu	His	Thr	Pro	Met	Tyr	Leu	Phe	Leu	Ser	Asn	Leu	50	55	60	
Ser	Phe	Ser	Asp	Leu	Cys	Phe	Ser	Ser	Val	Thr	Met	Pro	Lys	Leu	Leu	65	70	75	80
Gln	Asn	Met	Arg	Ser	Gln	Asp	Thr	Ser	Ile	Pro	Tyr	Gly	Gly	Cys	Leu	85	90	95	
Ala	Gln	Thr	Tyr	Phe	Phe	Met	Val	Phe	Gly	Asp	Met	Glu	Ser	Phe	Leu	100	105	110	
Leu	Val	Ala	Met	Ala	Tyr	Asp	Arg	Tyr	Val	Ala	Ile	Cys	Phe	Pro	Leu	115	120	125	
His	Tyr	Thr	Ser	Ile	Met	Ser	Pro	Lys	Leu	Cys	Thr	Cys	Leu	Val	Leu	130	135	140	
Leu	Leu	Trp	Met	Leu	Thr	Thr	Ser	His	Ala	Met	Met	His	Thr	Leu	Leu	145	150	155	160
Ala	Ala	Arg	Leu	Ser	Phe	Cys	Glu	Asn	Asn	Val	Val	Leu	Asn	Phe	Phe	165	170	175	
Cys	Asp	Leu	Phe	Val	Leu	Leu	Lys	Leu	Ala	Cys	Ser	Asp	Thr	Tyr	Ile	180	185	190	
Asn	Glu	Leu	Met	Ile	Phe	Ile	Met	Ser	Thr	Leu	Leu	Ile	Ile	Ile	Pro	195	200	205	
Phe	Phe	Leu	Ile	Val	Met	Ser	Tyr	Ala	Arg	Ile	Ile	Ser	Ser	Ile	Leu	210	215	220	
Lys	Val	Pro	Ser	Thr	Gln	Gly	Ile	Cys	Lys	Val	Phe	Ser	Thr	Cys	Gly	225	230	235	240
Ser	His	Leu	Ser	Val	Val	Ser	Leu	Phe	Tyr	Gly	Thr	Ile	Ile	Gly	Leu	245	250	255	
Tyr	Leu	Cys	Pro	Ala	Gly	Asn	Asn	Ser	Thr	Val	Lys	Glu	Met	Val	Met	260	265	270	
Ala	Met	Met	Tyr	Thr	Val	Val	Thr	Pro	Met	Leu	Asn	Pro	Phe	Ile	Tyr	275	280	285	





245                      250                      255  
 Tyr Ala Ala Ser Ile Phe Ile Tyr Ala Arg Pro Lys Ala Leu Ser Ala  
                          260                      265                      270  
 Phe Asp Thr Asn Lys Leu Val Ser Val Leu Tyr Ala Val Ile Val Pro  
                          275                      280                      285  
 Leu Phe Asn Pro Ile Ile Tyr Cys Leu Arg Asn Gln Asp Val Lys Arg  
                          290                      295                      300  
 Ala Leu Arg Arg Thr Leu His Leu Ala Gln Asp Gln Glu Ala Asn Thr  
 305                      310                      315                      320  
 Asn Lys Gly Ser Lys Ile Gly  
                          325

<210> 77  
 <211> 312  
 <212> PRT  
 <213> Rattus sp. I8

<400> 77

Met Asn Asn Lys Thr Val Ile Thr His Phe Leu Leu Leu Gly Leu Pro  
 1                      5                      10                      15  
 Ile Pro Pro Glu His Gln Gln Leu Phe Phe Ala Leu Phe Leu Ile Met  
                          20                      25                      30  
 Tyr Leu Thr Thr Phe Leu Gly Asn Leu Leu Ile Val Val Leu Val Gln  
                          35                      40                      45  
 Leu Asp Ser His Leu His Thr Pro Met Tyr Leu Phe Leu Ser Asn Leu  
 50                      55                      60  
 Ser Phe Ser Asp Leu Cys Phe Ser Ser Val Thr Met Leu Lys Leu Leu  
 65                      70                      75                      80  
 Gln Asn Ile Gln Ser Gln Val Pro Ser Ile Ser Tyr Ala Gly Cys Leu  
                          85                      90                      95  
 Thr Gln Ile Phe Phe Phe Leu Leu Phe Gly Tyr Leu Gly Asn Phe Leu  
                          100                      105                      110  
 Leu Val Ala Met Ala Tyr Asp Arg Tyr Val Ala Ile Cys Phe Pro Leu  
                          115                      120                      125  
 His Tyr Thr Asn Ile Met Ser His Lys Leu Cys Thr Cys Leu Leu Leu  
                          130                      135                      140  
 Val Phe Trp Ile Met Thr Ser Ser His Ala Met Met His Thr Leu Leu  
 145                      150                      155                      160  
 Ala Ala Arg Leu Ser Phe Cys Glu Asn Asn Val Leu Leu Asn Phe Phe  
                          165                      170                      175  
 Cys Asp Leu Phe Val Leu Leu Lys Leu Ala Cys Ser Asp Thr Tyr Val  
                          180                      185                      190

Asn Glu Leu Met Ile His Ile Met Gly Val Ile Ile Ile Val Ile Pro  
 195 200 205  
 Phe Val Leu Ile Val Ile Ser Tyr Ala Lys Ile Ile Ser Ser Ile Leu  
 210 215 220  
 Lys Val Pro Ser Thr Gln Ser Ile His Lys Val Phe Ser Thr Cys Gly  
 225 230 235 240  
 Ser His Leu Ser Val Val Ser Leu Phe Tyr Gly Thr Ile Ile Gly Leu  
 245 250 255  
 Tyr Leu Cys Pro Ser Gly Asp Asn Phe Ser Leu Lys Gly Ser Ala Met  
 260 265 270  
 Ala Met Met Tyr Thr Val Val Thr Pro Met Leu Asn Pro Phe Ile Tyr  
 275 280 285  
 Ser Leu Arg Asn Arg Asp Met Lys Gln Ala Leu Ile Arg Val Thr Cys  
 290 295 300  
 Ser Lys Lys Ile Ser Leu Pro Trp  
 305 310

<210> 78  
 <211> 314  
 <212> PRT  
 <213> Rattus sp. I9

<400> 78

Met Thr Arg Arg Asn Gln Thr Ala Ile Ser Gln Phe Phe Leu Leu Gly  
 1 5 10 15  
 Leu Pro Phe Pro Pro Glu Tyr Gln His Leu Phe Tyr Ala Leu Phe Leu  
 20 25 30  
 Ala Met Tyr Leu Thr Thr Leu Leu Gly Asn Leu Ile Ile Ile Ile Leu  
 35 40 45  
 Ile Leu Leu Asp Ser His Leu His Thr Pro Met Tyr Leu Phe Leu Ser  
 50 55 60  
 Asn Leu Ser Phe Ala Asp Leu Cys Phe Ser Ser Val Thr Met Pro Lys  
 65 70 75 80  
 Leu Leu Gln Asn Met Gln Ser Gln Val Pro Ser Ile Pro Tyr Ala Gly  
 85 90 95  
 Cys Leu Ala Gln Ile Tyr Phe Phe Leu Phe Phe Gly Asp Leu Gly Asn  
 100 105 110  
 Phe Leu Leu Val Ala Met Ala Tyr Asp Arg Tyr Val Ala Ile Cys Phe  
 115 120 125  
 Pro Leu His Tyr Met Ser Ile Met Ser Pro Lys Leu Cys Val Ser Leu  
 130 135 140

Val Val Leu Ser Trp Val Leu Thr Thr Phe His Ala Met Leu His Thr  
 145 150 155 160  
 Leu Leu Met Ala Arg Leu Ser Phe Cys Glu Asp Ser Val Ile Pro His  
 165 170 175  
 Tyr Phe Cys Asp Met Ser Thr Leu Leu Lys Val Ala Cys Ser Asp Thr  
 180 185 190  
 His Asp Asn Glu Leu Ala Ile Phe Ile Leu Gly Gly Pro Ile Val Val  
 195 200 205  
 Leu Pro Phe Leu Leu Ile Ile Val Ser Tyr Ala Arg Ile Val Ser Ser  
 210 215 220  
 Ile Phe Lys Val Pro Ser Ser Gln Ser Ile His Lys Ala Phe Ser Thr  
 225 230 235 240  
 Cys Gly Ser His Leu Ser Val Val Ser Leu Phe Tyr Gly Thr Val Ile  
 245 250 255  
 Gly Leu Tyr Leu Cys Pro Ser Ala Asn Asn Ser Thr Val Lys Glu Thr  
 260 265 270  
 Val Met Ser Leu Met Tyr Thr Met Val Thr Pro Met Leu Asn Pro Phe  
 275 280 285  
 Ile Tyr Ser Leu Arg Asn Arg Asp Ile Lys Asp Ala Leu Glu Lys Ile  
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 Met Cys Lys Lys Gln Ile Pro Ser Phe Leu  
 305 310

<210> 79  
 <211> 312  
 <212> PRT  
 <213> Rattus sp. I14

<400> 79

Met Thr Gly Asn Asn Gln Thr Leu Ile Leu Glu Phe Leu Leu Leu Gly  
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 Leu Pro Ile Pro Ser Glu Tyr His Leu Leu Phe Tyr Ala Leu Phe Leu  
 20 25 30  
 Ala Met Tyr Leu Thr Ile Ile Leu Gly Asn Leu Leu Ile Ile Val Leu  
 35 40 45  
 Val Arg Leu Asp Ser His Leu His Met Pro Met Tyr Leu Phe Leu Ser  
 50 55 60  
 Asn Leu Ser Phe Ser Asp Leu Cys Phe Ser Ser Val Thr Met Pro Lys  
 65 70 75 80  
 Leu Leu Gln Asn Met Gln Ser Gln Val Pro Ser Ile Ser Tyr Thr Gly  
 85 90 95  
 Cys Leu Thr Gln Leu Tyr Phe Phe Met Val Phe Gly Asp Met Glu Ser

100					105					110					
Phe	Leu	Leu	Val	Val	Met	Ala	Tyr	Asp	Arg	Tyr	Val	Ala	Ile	Cys	Phe
	115						120					125			
Pro	Leu	Arg	Tyr	Thr	Thr	Ile	Met	Ser	Thr	Lys	Phe	Cys	Ala	Ser	Leu
	130					135					140				
Val	Leu	Leu	Leu	Trp	Met	Leu	Thr	Met	Thr	His	Ala	Leu	Leu	His	Thr
145					150					155					160
Leu	Leu	Ile	Ala	Arg	Leu	Ser	Phe	Cys	Glu	Lys	Asn	Val	Ile	Leu	His
				165					170					175	
Phe	Phe	Cys	Asp	Ile	Ser	Ala	Leu	Leu	Lys	Leu	Ser	Cys	Ser	Asp	Ile
			180					185					190		
Tyr	Val	Asn	Glu	Leu	Met	Ile	Tyr	Ile	Leu	Gly	Gly	Leu	Ile	Ile	Ile
	195						200					205			
Ile	Pro	Phe	Leu	Leu	Ile	Val	Met	Ser	Tyr	Val	Arg	Ile	Phe	Phe	Ser
	210					215					220				
Ile	Leu	Lys	Phe	Pro	Ser	Ile	Gln	Asp	Ile	Tyr	Lys	Val	Phe	Ser	Thr
225					230					235					240
Cys	Gly	Ser	His	Leu	Ser	Val	Val	Thr	Leu	Phe	Tyr	Gly	Thr	Ile	Phe
				245					250					255	
Gly	Ile	Tyr	Leu	Cys	Pro	Ser	Gly	Asn	Asn	Ser	Thr	Val	Lys	Glu	Ile
			260					265					270		
Ala	Met	Ala	Met	Met	Tyr	Thr	Val	Val	Thr	Pro	Met	Leu	Asn	Pro	Phe
		275					280					285			
Ile	Tyr	Ser	Leu	Arg	Asn	Arg	Asp	Met	Lys	Arg	Ala	Leu	Ile	Arg	Val
	290					295					300				
Ile	Cys	Thr	Lys	Lys	Ile	Ser	Leu								
305					310										

<210> 80  
 <211> 314  
 <212> PRT  
 <213> Rattus sp. I15

<400> 80

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			20				25						30		
Ser	Met	Tyr	Leu	Thr	Thr	Val	Leu	Gly	Asn	Leu	Ile	Ile	Ile	Ile	Leu
		35					40					45			
Ile	His	Leu	Asp	Ser	His	Leu	His	Thr	Pro	Met	Tyr	Leu	Phe	Leu	Ser
	50					55					60				

Asn	Leu	Ser	Phe	Ser	Asp	Leu	Cys	Phe	Ser	Ser	Val	Thr	Met	Pro	Lys	
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Leu	Leu	Gln	Asn	Met	Gln	Ser	Gln	Val	Pro	Ser	Ile	Pro	Phe	Ala	Gly	
				85					90					95		
Cys	Leu	Thr	Gln	Leu	Tyr	Phe	Tyr	Leu	Tyr	Phe	Ala	Asp	Leu	Glu	Ser	
			100					105					110			
Phe	Leu	Leu	Val	Ala	Met	Ala	Tyr	Asp	Arg	Tyr	Val	Ala	Ile	Cys	Phe	
			115				120					125				
Pro	Leu	His	Tyr	Met	Ser	Ile	Met	Ser	Pro	Lys	Leu	Cys	Val	Ser	Leu	
	130					135					140					
Val	Val	Leu	Ser	Trp	Val	Leu	Thr	Thr	Phe	His	Ala	Met	Leu	His	Thr	
145					150					155					160	
Leu	Leu	Met	Ala	Arg	Leu	Ser	Phe	Cys	Ala	Asp	Asn	Met	Ile	Pro	His	
				165					170					175		
Phe	Phe	Cys	Asp	Ile	Ser	Pro	Leu	Leu	Lys	Leu	Ser	Cys	Ser	Asp	Thr	
			180					185					190			
His	Val	Asn	Glu	Leu	Val	Ile	Phe	Val	Met	Gly	Gly	Leu	Val	Ile	Val	
		195					200					205				
Ile	Pro	Phe	Val	Leu	Ile	Ile	Val	Ser	Tyr	Ala	Arg	Val	Val	Ala	Ser	
	210					215					220					
Ile	Leu	Lys	Val	Pro	Ser	Val	Arg	Gly	Ile	His	Lys	Ile	Phe	Ser	Thr	
225				230						235					240	
Cys	Gly	Ser	His	Leu	Ser	Val	Val	Ser	Leu	Phe	Tyr	Gly	Thr	Ile	Ile	
				245					250					255		
Gly	Leu	Tyr	Leu	Cys	Pro	Ser	Ala	Asn	Asn	Ser	Thr	Val	Lys	Glu	Thr	
			260					265					270			
Val	Met	Ala	Met	Met	Tyr	Thr	Val	Val	Thr	Pro	Met	Leu	Asn	Pro	Phe	
			275				280					285				
Ile	Tyr	Ser	Leu	Arg	Asn	Arg	Asp	Met	Lys	Glu	Ala	Leu	Ile	Arg	Val	
	290					295					300					
Leu	Cys	Lys	Lys	Lys	Ile	Thr	Phe	Cys	Leu							
305					310											